Center Innovation Fund: JSC CIF

Orbital Debris Impact Sensor Engineering Model

Completed Technology Project (2012 - 2013)

Project Introduction

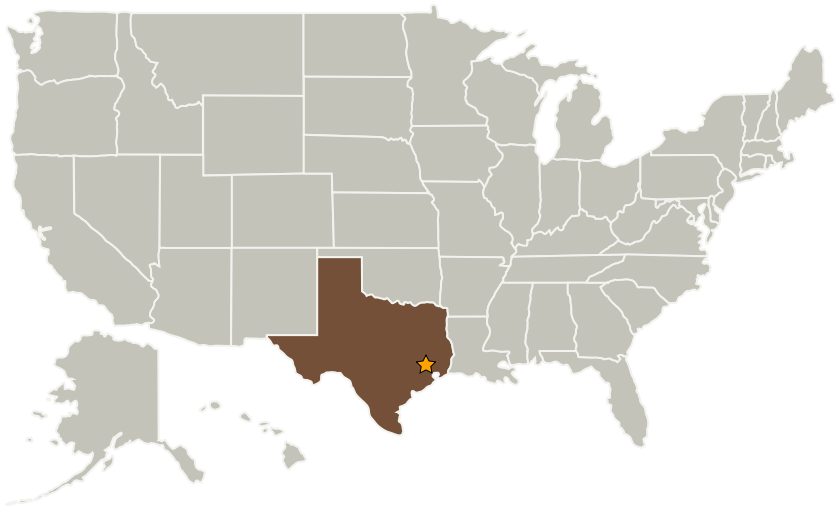
This project is to develop an engineering model (prototype) of an orbital debris impact sensor suitable for developmental integration testing as a payload for the Aggiesat6 spacecraft. The purpose of the sensor is to collect data on debris objects ranging in size from 0.5 to 3 mm, which are difficult to measure by other means.

The prototype would be developed in cooperation with the Texas A&M University AggieSat Lab to fit available constraints in size, shape, power, and data interfaces. This effort leverages development and testing from previous and current projects sponsored by the JSC Technology Working Group, including HIMS and DRAGONS. Follow-on work would develop a flight article designed to collect calibrated data on the velocity and size of debris impacts when attached to a small satellite in low Earth orbit.

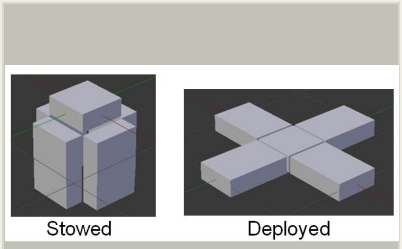
Anticipated Benefits

Gain experience in development of flight-like sensors.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas



Project Image Orbital Debris Impact Sensor Engineering Model

Table of Contents

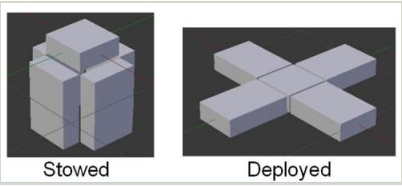
Orbital Debris Impact Sensor Engineering Model

Completed Technology Project (2012 - 2013)

Primary U.S. Work Locations

Texas

Images



12091-1377812360487.jpg
Project Image Orbital Debris Impact Sensor Engineering Model
(https://techport.nasa.gov/image/2262)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Center Innovation Fund: JSC CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

Carlos H Westhelle

Project Manager:

Joe L Hamilton

Principal Investigator:

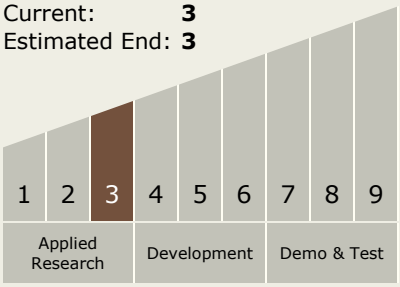
Joe L Hamilton

Orbital Debris Impact Sensor Engineering Model

Completed Technology Project (2012 - 2013)

Technology Maturity (TRL)

Start: **3**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.6 Networking and Ground Based Orbital Debris Tracking and Management
    - TX05.6.2 Orbital Debris Characterization